

## Two New Species of *Weinmannia* (Cunoniaceae) from the Venezuelan Guayana

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**ABSTRACT.** Two new species of *Weinmannia* (Cunoniaceae) from the highlands of southern Venezuela are described and illustrated. *Weinmannia ilutepuiensis* P. E. Berry & J. Bradford is a simple-leaved, serrate-margined species known only from Ilú-tepui in Estado Bolívar, and *Weinmannia corocoensis* J. Bradford & P. E. Berry is a pinnate-leaved species with tiny, revolute-margined leaflets currently known only from Cerro Coro Coro in Estado Amazonas.

While preparing the floristic treatment of Cunoniaceae for the *Flora of the Venezuelan Guayana* and as part of a broader study of neotropical *Weinmannia* by the second author, two distinctive new species of *Weinmannia* were found among the collections examined from the tepuis, or tabletop mountains, of southern Venezuela. Both species were collected from relatively poorly explored mountains, one from Ilú-tepui in Estado Bolívar, and the other from Cerro Coro Coro in Estado Amazonas. These species are described and illustrated below.

***Weinmannia ilutepuiensis*** P. E. Berry & J. Bradford, sp. nov. TYPE: Venezuela, Estado Bolívar: Ilú-tepui, lower plateau, with varied habitats, rocky, boggy, and short forest to 5 m tall, 05°25'03"N, 60°29'W, 2500 m, 16 Apr. 1988, Liesner 23413 (holotype, MO; isotypes, NY, US, VEN). Figure 1A-D.

Frutex vel arbor 1-5(-10)-metralis, foliis simplicibus, laminis foliorum infra dense ochraceo-lanatis, ellipticis, coriaceis, marginibus serratis, 1.5-6.0 × 0.8-3.5 cm; pseudoracemis 4-6 cm longis, lanatis, pedicellis sub anthesi 1-2.5 mm longis post anthesin 2.5-4 mm longis; capsulis villosa-lanatis, 3-3.5 mm longis.

Shrub or small tree 1-5(-10) m tall; young stems lanate, nodes hirsute. Leaves opposite, simple, elliptical, subcoriaceous, 1.5-6.0 cm long, 0.8-3.5 cm wide, broadly acute to rounded at the apex, broadly acute at the base, sparsely pilose to glabrescent and dark green on the upper surface, light brown and densely lanate-villous on the lower surface; secondary veins 10-15 per side, impressed on the upper surface and prominent on lower surface, subparallel

from midvein until divaricating within ca. 4 mm of the margin with each branch joining an adjacent branch at a marginal sinus; margins serrate, planar to revolute, with 10-15 glandular teeth per side between successive sinuses or adjacent to a sinus; petioles 3-4 mm long, lanate; stipules broadly elliptical to suborbicular, 3-6 mm long, 3-5 mm wide, hirsute on the outside, dark brown and glabrous adaxially. Pseudoracemes in pairs at the branch apex, exceeding the leaves, 4-6 cm long, axis lanate. Flowers arranged in fascicles along the inflorescence axis with 1-several flowers per fascicle; bracteoles subtending fascicles, linear to obovate, 1.5-2 mm long, with long hairs on the dorsal surface; pedicels 1.0-2.5 mm long in flower, 2.5-4.0 mm long in fruit, lanate; sepals four, elliptic to narrowly deltoid, acute, 1-1.5 mm long, lanate abaxially, glabrous adaxially, persistent; petals four, narrowly obovate, 1.5-2.5 mm long, ca. 1 mm wide, glabrous, off-white; filaments eight, 2.5-4.0 mm long, anthers oblong, ca. 0.4 mm wide, glabrous; ovary lanate, ca. 1.5 mm long, the 2 styles divergent and each 1.5 mm long, basally pubescent but glabrous toward the tips. Capsules 3.0-3.5 mm long (not including style), lanate-villous; seeds oblong, ca. 1.0 mm long, sparsely covered with simple hairs 0.5 mm long.

*Ecology and distribution.* Occurring in patches of short forest on lower summit plateau overlying sandstone, known only from Ilú-tepui in the eastern tepui chain of Estado Bolívar, Venezuela, between 2500 and 2630 m elevation.

In the size and shape of leaves, inflorescences, flowers, and fruits, *Weinmannia ilutepuiensis* most closely resembles the Andean *W. rollottii* Killip, especially variety *testudineata* (Cuatrecasas) Bernardi. Both species belong to series *Dryadifoliae* Bernardi (Bernardi, 1963). However, *W. ilutepuiensis* differs in its dense, lanate-villous indumentum, including the calyx and the capsule (which are glabrous in *W. rollottii*).

On the same helicopter trip to Ilú-tepui during which Ronald Liesner collected the type specimen, he also made three other collections of *Weinmannia* (numbers 23422, 23417, and 23366, all at MO). None of these additional collections fits easily into



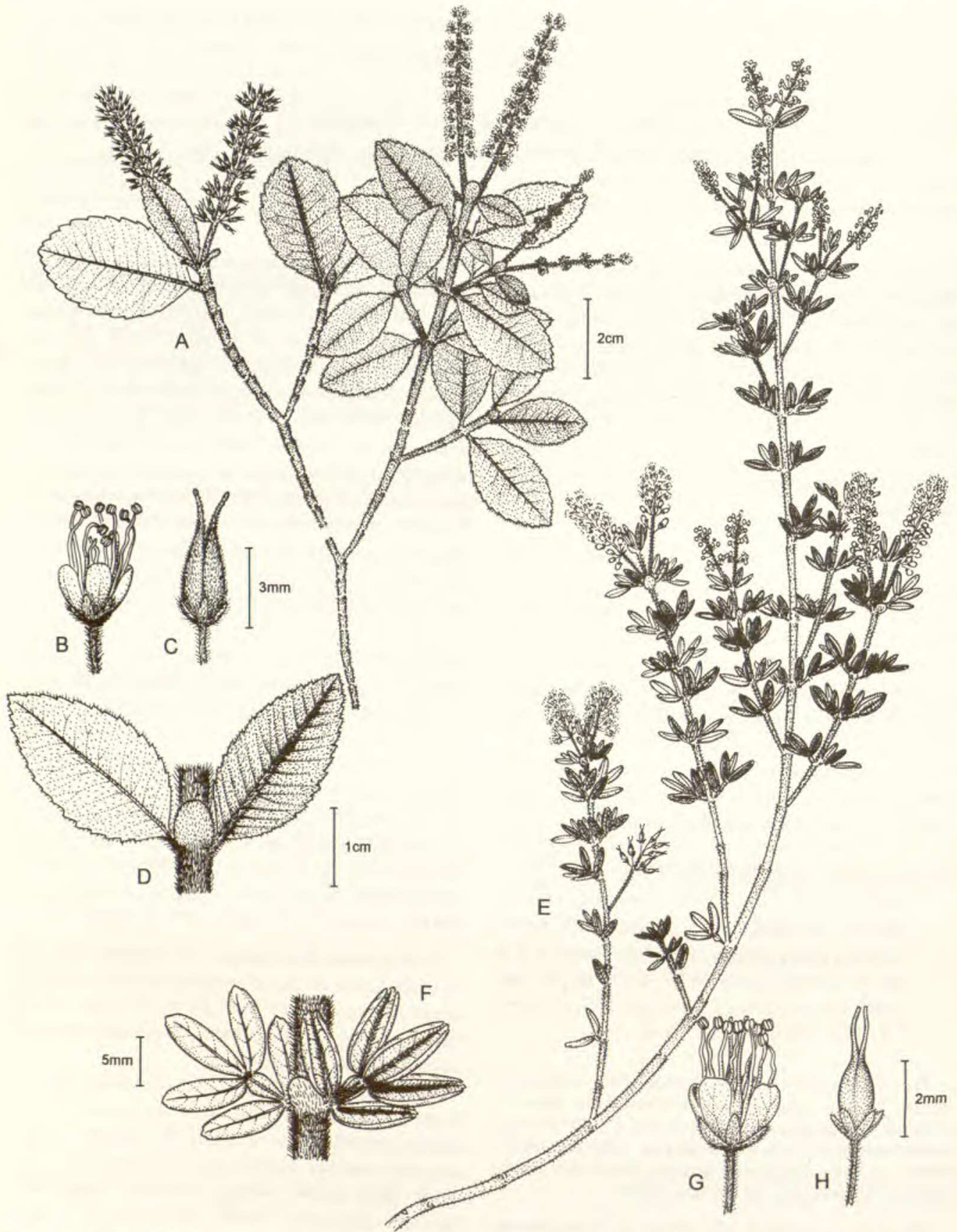


Figure 1. A-D. *Weinmannia ilutepuiensis* P. E. Berry & J. Bradford. —A. Habit. —B. Flower. —C. Fruit. —D. Detail of leaf pair and stipule. Drawn from *Liesner* 23413 (flowering) and 23338 (fruiting). E-H. *Weinmannia corocoroensis* J. Bradford & P. E. Berry. —E. Habit. —F. Detail of leaf pair and stipule. —G. Flower. —H. Young fruit. Drawn from *Huber* 12296.



any known species, and they appear to be intermediates between *W. ilutepuiensis* and *W. brachystachya* Willdenow ex Engler. Since these two species are so different phenotypically (*W. brachystachya* is characterized by small, compound, glabrous leaves with pseudo-umbellate inflorescences), the apparent hybrids were only recognized when all Liesner collections from the area were seen together. *Weinmannia brachystachya* is not yet known from Ilú-tepui, but it does occur on the nearby Roraima-tepui.

*Paratypes.* VENEZUELA. **Bolívar:** Cumbre del Ilú-(Uru-)tepui, sector centro-meridional, vegetación herbácea-fruticosa sobre superficies poco disectadas, 5°25'N, 60°59'W, 2630 m, 29 Apr. 1984, *Huber 9520* (MYF, US); Ilú-tepui, lower plateau, with varied habitats, rocky, boggy, and short forest to 5 m tall, 05°25'03"N, 60°29'W, 2500 m, 15 Apr. 1988, *Liesner 23338* (MO, US, VEN); Ilú-tepui, cumbre slopes, saddle between N peak and central plateau, 7000–7800 ft., 15 Mar. 1952, *Maguire 33426* (NY, US); Ilú-tepui, slopes below uppermost W-facing escarpment, 7500–8000 ft., *Maguire 33508* (NY, US).

***Weinmannia corocoroensis*** J. Bradford & P. E. Berry, sp. nov. TYPE: Venezuela. Estado Amazonas: cumbre del Cerro Coro-Coro, en las cabeceras nor-occidentales del Río Manapiare (sector NW de la Serranía Yutajé), 05°46'N, 66°12'W, 2200 m, 12 Nov. 1987, *Otto Huber 12296* (holotype, MO; isotypes, MYF, VEN). Figure 1E–H.

A *Weinmannia guyanensis* Klotzsch foliolis subintegris valde revolutis, foliolo terminali lateralibus simili, inflorescentiis congestioribus, pubescentia densiore longioreque differt.

Shrub 0.5–1.5 m tall; young stems villous, the hairs 1–1.5 mm long. Leaves opposite, imparipinnate, rachis winged, rigid-coriaceous, leaflets 1- or 2-paired (occasionally unifoliate), the terminal and lateral leaflets elliptical to obovate, similar in size and shape, 5–12 mm long, ca. 3–5 mm wide when flattened but lateral margins strongly inrolled, lateral margins entire, apex generally with three small teeth, upper surface glabrous with hairs occasional along midvein, lower surface glabrous except for strigose hairs 1–1.5 mm long along midvein especially toward the base; secondary veins 6–9 per side, barely visible below, subparallel from midvein until divaricating within ca. 1 mm of the margin with each branch joining an adjacent branch and together forming a vein which extends to the margin; petioles 1–2 mm long, densely villous; stipules obovate, ciliate, hairs sparse on outer surface, glabrous on inner surface, 2–4 mm long, 1.5–3.5 mm wide. Pseu-

doracemes in axillary pairs near branch tips, exceeding the leaves, 20–30 mm long in flower, axis villous, the basal 8–12 mm sterile, the apical portion densely covered with flowers. Flowers arranged in fascicles along the inflorescence axis with 1–several flowers per fascicle; bracteoles subtending fascicles, rectangular, apex blunt, ciliate, 0.7–1 mm long, 0.5–0.8 mm wide; pedicels 1.5–3.0 mm long in flower, with sparse, shaggy hairs; sepals four, narrowly deltoid, acute, 1.0–1.5 mm long, hairs on midvein and apex; petals four, obovate, 1.5–2.0 mm long, ca. 1 mm wide, glabrous, white, with a prominent midvein divaricating near the apex; filaments eight, 2.0–2.8 mm long, anthers oblong, ca. 0.4 mm long, glabrous; gynoecium 1.5–1.8 mm long, glabrous, the two styles divergent, glabrous, ca. 1 mm long. Mature fruits not seen, recorded on labels as being red.

*Ecology and distribution.* Locally frequent in tepui scrub communities overlying sandstone and in high-tepui meadows along streams; known only from the summit of Cerro Coro Coro in Estado Amazonas, Venezuela, at 2200 m elevation.

*Weinmannia corocoroensis* resembles *W. guyanensis* Klotzsch, especially variety *quinata* Cuatrecasas, in its habit and leaf venation pattern, but differs in having denser, longer pubescence along the stems, nodes, and inflorescence structures; smaller, more revolute and nearly entire leaflets; terminal and lateral leaflets of the same size; and shorter, more congested inflorescences. This species was noted in the field by Otto Huber as being common, while another specimen (*Huber 12332*, MO) from the same location and apparently belonging to *W. guyanensis* was rare. *Weinmannia corocoroensis* is also similar to *W. brachystachya* Willdenow ex Engler in the few, apical teeth of the leaflets and in its shrubby habit, but differs in its more elongate inflorescence, denser pubescence (on stems, midveins of leaves, inflorescence axis, and petioles), more regularly elliptical leaflets, and more congested nodes on the stem.

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#### Literature Cited

- Bernardi, L. 1963. Revisio generis *Weinmannia*. Pars II: Sectio *Simplicifoliae*. *Candollea* 18: 285–334.